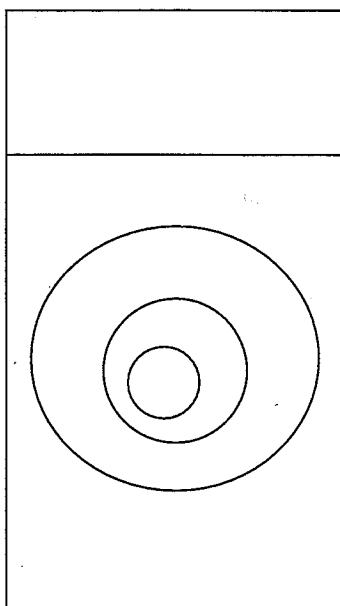


Review of Real numbers:



Find the value for:  $x^2 = -1$       answer: \_\_\_\_\_

Introduction of the imaginary unit:     $i = \sqrt{-1}$        $i^2 = -1$

Solve:      a)  $x^2 = -9$       b)  $x^2 = -13$       c)  $\frac{1}{2}(x+1)^2 = 5$

A complex number written in standard form is a number  $a + bi$  ( $a$  and  $b$  are real numbers)

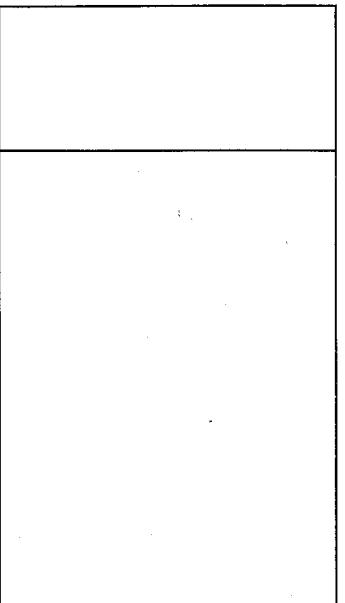
For  $-3 + 5i$  identify      real part: \_\_\_\_\_      imaginary part: \_\_\_\_\_

Write an example of a complex number where  $a$  and  $b$  are not = to zero:

Write an example of a complex number where  $a$  is not = to zero,  $b = 0$ :

Write an example of a complex number where  $b$  is not = to zero,  $a = 0$ :

Complex Numbers:

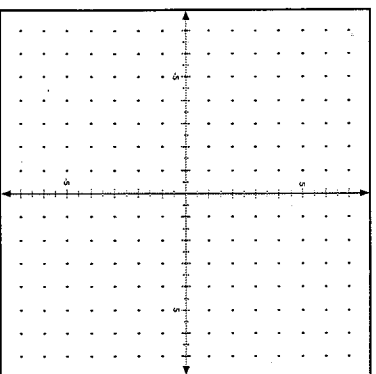


Plotting complex numbers:

Label horizontal axis: real

Label vertical axis: imaginary

In which quadrant is  $-3 + 5i$ ?



Plot: A  $3 - 2i$

B  $-5 + 3i$

C  $-2 - i$

D  $2i$

Adding complex numbers

$$(5 + 3i) + (7 - 2i)$$

$$(5 + 3i) + (1i)$$

subtracting complex numbers

$$(5 + 3i) - (7 - 2i)$$

$$(5 + 3i) - (2i)$$

multiplying complex numbers

$$5(2i - 7)$$

$$3i(2i - 7)$$

$$(5 + 3i)(7 - 2i)$$